AMENDMENTS TO THE CLAIMS

1. (Currently Amended) ~~a~~ A back pressure regulator for ink-jet pen, comprising

an orifice formed as a passage in the wall of the ink-jet pen for allowing an ambient air to bubble into the pen;

a recess formed on the inner side of the wall, and capable of communicate with the ambient air via the orifice; and

a cover element positioning above the recess, having ink supply channel for providing a shortest path to supply the ink to the recess in a high efficient way, and an opening within the area of the recess for allowing the air bubbles enter into the pen.

2. (Currently Amended) The back pressure regulator of claim 1, wherein the recess having at least two grooves which starts from the end of the orifice and extending to different ~~directionss~~ directions on the wall of the ink-jet pen.

3. (Original) The back pressure regulator of claim 2, wherein the recess having three grooves which starts from the end of the orifice and extending to different directions on the wall of the ink-jet pen to form as a "Y" shape.

4. (Original) The back pressure regulator of claim 2, wherein the recess having four grooves which starts from the end of the

orifice and extending to different directions on the wall of the ink-jet pen to form as a "+" shape.

5. (Original) The back pressure regulator of claim 2, wherein the recess having bottom surface varying in depth thereof for defining a varying gap between the cover element and the bottom surface.

6. (Original) The back pressure regulator of claim 5, wherein the gap having a smallest portion near the orifice and a larger portion increases as the distance from the orifice increases, and thereby providing a stronger adhesive force to the ink around the orifice.

7. (Original) The back pressure regulator of claim 1, wherein the recess having bottom surface varying in depth thereof for defining a varying gap between the cover element and the bottom surface.

8. (Original) The back pressure regulator of claim 7, wherein the gap having a smallest portion near the orifice and a larger portion increases as the distance from the orifice increases, and thereby providing a stronger adhesive force to the ink around the orifice.

9. (Original) The back pressure regulator of claim 1, wherein the cover element is made form metal, plastic rubber or similar hydrophilic material.

10. (Currently Amended) ~~a~~ A back pressure regulator for ink-jet pen, comprising

an orifice formed as a passage in the wall of the ink-jet pen for allowing ambient air to bubble into the pen;

a recess formed on the inner side of the wall, and capable of communicate with the ambient air via the passage; and

a cover element form in spiral shape and positioning above the recess, having a spiral gap providing an ink supply channel and an opening within the area of the recess for allowing the air bubbles enter the pen.

11. (Original) The back pressure regulator of claim 10, wherein the recess having at least two grooves which starts from the end of the orifice and extending to different directions on the wall of the ink-jet pen.

12. (Original) The back pressure regulator of claim 11, wherein the recess having three grooves which starts from the end of the orifice and extending to different directions on the wall of

the ink-jet pen to form as a "Y" shape.

13. (Original) The back pressure regulator of claim 11, wherein the recess having four grooves which starts from the end of the orifice and extending to different directions on the wall of the ink-jet pen to form as a "+" shape.

14. (Original) The back pressure regulator of claim 10, wherein the cover element having a spiral gap, the gap having a smallest portion near the orifice and a larger portion increases as the distance from the orifice increases, and thereby providing a stronger adhesive force to the ink around the orifice.

15. (Original) The back pressure regulator of claim 10, wherein the cover element is formed in a coil shape by winding of a metal wire.

16. (New) The back pressure regulator of claim 1, wherein the cover element includes a spiral wire providing the ink supply channel.